News release

Europe and North America warming due to human activity

28 July 2003

Climate scientists at the Met Office have found new evidence that humans are to blame for climate change, not only on the global level, but over individual continents as well. Scientists from the Met Office's Hadley Centre for Climate Prediction and Research have compared temperature rises since the beginning of the last century, over six continents, with simulations from climate models. They believe that the effect of human-made greenhouse gases can be seen over the past few decades in every continent, including Europe, but is especially clear over North America, South America and Africa.

Dr Peter Stott, who leads the team at the Hadley Centre, said: "The continental warming of the past few decades cannot be explained by natural factors such as solar changes, volcanoes or natural variability. But once we factor in the effects of human activity, we find we can explain the warming that is observed. It is generally accepted that global-scale warming of the past few decades is largely due to emissions of greenhouse gases such as carbon dioxide. But now we have gone a step further and shown that the same thing is happening on the scale of continents."

Global average temperatures have risen by about 0.6 - 0.7 °C over the last 100 years. Identifying the effect of human activity on the global scale is difficult due to the 'noise' of natural climate variability - on a continental scale the noise is even greater.

Dr Stott has used the Hadley Centre's climate model together with advanced 'optimal detection' analyses, to show that the effects of greenhouse gases from human activity, such as CO^2 from fossil fuel burning, can be detected. He also showed that cooling from sulphate aerosols, small particles also generated from fossil fuel emissions, counteracts some of the greenhouse warming.

Notes:

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